

REMARKS

This paper is responsive to the final Office Action identified above, and is further responsive in any other manner indicated below.

IMPROPER EXAMINATION PROCEDURE

The Office Action mailed 6 November 2003 is defective under 37 CFR §1.104 and MPEP §707.05 for the reasons stated in Applicant's "Request for Corrected Office Action and Restart of the Period for Response" formally filed on 24 November 2003. Copies of Applicant's Request and the "Auto-Reply Facsimile Transmission" indicating receipt of such Request by the USPTO are attached.

MPEP §710.06 explicitly and clearly states *verbatim* "[w]here the citation of a reference is incorrect or an Office action contains some other defect and this error is called to the attention of the Office within 1 month of the mail date of the action, the Office will restart the previously set period for reply to run from the date the error is corrected, if requested to do so by applicant."

However, such a Request has been ignored, and no correction made.

Applicant **strongly traverses** the complete lack of response to a formal, timely and proper filing, the improper examination in not supplying a Form PTO-892 listing all of the newly-cited references used in rejection of the claims, and the improper procedure in not restarting the period for response to the defective 6 November 2003 Action as required in MPEP §710.06. However, in a *bona fide* attempt to respond to the defective 6 November Action and advance examination in the present application, Applicant respectfully submits the present Amendment.

PENDING CLAIMS

Claims 1-17 were pending, under consideration and subjected to examination in the Office Action. Appropriate claims have been amended, deleted and/or added in order to adjust a clarity and/or focus of Applicant's claimed invention. Such changes are unrelated to any prior art or scope adjustment and are simply refocused claims in which Applicant is present interested. At entry of this paper, Claims 1, 5, 6, 10, 12 and 14-19 remain pending for further consideration and examination in the present application.

REJECTION UNDER 35 USC §112 2ND ¶ - TRAVERSED

Claim 12 was rejected under 35 USC §112 2ND ¶ for the reasons listed at Item 4 on page 2 of the Detailed Action. Applicant has carefully reviewed and clarified Claim 12 in a manner which is believed to overcome the rejection. Therefore, reconsideration and withdrawal of the 35 USC §112 2ND ¶ rejection of Claim 12 are respectfully requested.

ALL REJECTIONS UNDER 35 USC §§102 AND 103 - TRAVERSED

All 35 USC rejections (*i.e.*, the 35 USC §102 rejection of Claims 1, 3, 6, 8, 12, 15 and 16 as being anticipated by Yamazoe (JP 04-250423); the §102 rejection of Claims 1, 3, 4, 12, 13 and 15 as being anticipated by Muto (JP 07-261179); the §102 rejection of Claims 1, 3, 4, 6, 12, 13, 15 and 16 as being anticipated by Sugawara *et al.* (JP 11-258609); the 35 USC §103 rejection of Claims 5, 9, 10, 14 and 17 as being unpatentable over Sugawara *et al.* in view of Osaki *et al.* (JP 05-107543); the §103 rejection of Claim 18 as being unpatentable over Sugawara *et al.* in view of

Afzali-Ardakani *et al.* (US 5,571,852 A); and the §103 rejection of Claim 19 as being unpatentable over Sugawara *et al.* in view of Osaki *et al.*, and further in view of Afzali-Ardakani *et al.*) are respectfully traversed. Such rejections have been rendered obsolete by the present clarifying amendments to Applicant's claims, and accordingly, traversal arguments are not appropriate at this time. However, Applicant respectfully submits the following to preclude renewal of any such rejections against Applicant's clarified claims.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated herein by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following.

Unrelated to any prior art rejection, Claims 2-4, 7-9, 11 and 13 now have been cancelled without prejudice or disclaimer of any scope or subject matter, thus rendering this rejection of such claims obsolete at this time. Patentability of remaining ones of the rejected claims are supported as follows.

In order to properly support a §102 anticipatory-type rejection, any applied art reference must disclose each and every limitation of any rejected claim. In order to properly support a §103 obviousness-type rejection, the reference not only must suggest the claimed features, but also must contain the motivation for modifying the art to arrive at an approximation of the claimed features. However, the cited art does not adequately support either a §102 anticipation-type rejection or a §103

obviousness-type rejection because it does not, at minimum, disclose (or suggest) the following limitations of Applicant's clarified claims.

Applicant's invention strives toward improving manufacturability of liquid crystal displays (LCDs). More particularly, the present invention makes uses specialized application and control of a surface charge density of a rubbing roller to improve manufacturability of liquid crystal displays. Regarding independent Claim 1 (and any claims dependent therefrom), Applicant's specialized arrangement includes "...bringing a charge control member into contact with a rubbing surface of the rubbing cloth, ...which brings said rubbing cloth to take a charge whose polarity is opposed to a charge of said alignment film...." Applicants found that by actually contacting the rubbing surface, charges can be deposited more accurately and directly. Independent Claim 12 (and claims dependent therefrom) is similar to independent Claim 1.

Rebutting the applied references, means 9 of Yamazoe is basically a grounding means (i.e., grounding path), and accordingly, Yamazoe is not an arrangement "...which brings said rubbing cloth to take a charge whose polarity is opposed ("or different from"; claim 12) to a charge of said alignment film....". In fact, Yamazoe thus teaches away from Applicant's claimed invention.

Muto does not have a charge control member in contact with a rubbing surface of the rubbing cloth, i.e., at best, the dielectric fibers within Muto's rubber mat 4 is on a non-rubbing surface side of Muto's rubbing cloth, and allow positive and negative charges to neutralize each other within the rubber mat. Accordingly, Muto actually teaches away from Applicant's claimed invention. Sugawara *et al.* likewise does not have a charge control member in contact with a rubbing surface of

the rubbing cloth, *i.e.*, at best, the conductive layer of Sugawara *et al.* is likewise on a non-rubbing surface side of Muto's rubbing cloth. Accordingly, Sugawara *et al.* actually teaches away from Applicant's claimed invention. None of the other references (whether taken singly, or in the applied combinations) cure these fatal deficiencies.

Applicant's independent Claims 6 and 10 (and claims dependent therefrom) claim "...said rubbing step is feedback-controlled...so that the surface potential of said rubbing cloth has the same polarity as the surface potential of said alignment film...."

Rebutting the applied references, means 9 in Yamazoe is basically a grounding means (*i.e.*, grounding path), and accordingly, Yamazoe is not an arrangement in which "...said rubbing step is feedback-controlled...so that the surface potential of said rubbing cloth has the same polarity as the surface potential of said alignment film...." In fact, Yamazoe thus teaches away from Applicant's claimed invention by simply teaching grounding. Muto does not teach controlling such that the "...surface potential of said rubbing cloth has the same polarity as the surface potential of said alignment film...", *i.e.*, at best, the dielectric fibers within Muto's rubber mat 4 is on a non-rubbing surface side of Muto's rubbing cloth, and apply opposite polarity positive or negative charges to neutralize each other within the rubber mat. Accordingly, Muto actually teaches away from Applicant's claimed invention. Sugawara *et al.* likewise does not teach controlling such that the "...surface potential of said rubbing cloth has the same polarity as the surface potential of said alignment film...", *i.e.*, at best, the conductive layer in Sugawara *et al.* is likewise on a non-rubbing surface side of Muto's rubbing cloth and teaches

"offsetting" any static electricity generated (presumably by applying opposite polarity charges). Accordingly, Sugawara *et al.* actually teaches away from Applicant's claimed invention. None of the other references (whether taken singly, or in the applied combinations) cure these fatal deficiencies.

Furthermore, the following remarks from Applicant's foreign representative are submitted in support of traversal of the rejection and patentability of Applicant's claims.

When the rubbing cloth and the alignment film (polyimide) come into contact for rubbing, for example, the cloth is positively charged and the alignment film is negatively charged, which is regarded as natural, based on the principle of contact charge. In the present invention, if the surface of the rubbing cloth has been charged to the same polarity as the alignment film, both surfaces of the rubbing cloth and the alignment film have the same polarity when they are brought into contact for rubbing. Thus, the problem in which foreign materials are generated from the alignment film during rubbing and remain on the alignment film can be controlled. As a result, the occurrence of pixel fault or line fault caused by the remaining foreign materials can be prevented. These faults adversely affect the display properties which are critical in producing liquid-crystal display elements. The prevention of the fault occurrence caused by the foreign materials is greatly effective in the liquid-display manufacturing industry.

The method for controlling the surface conditions (such as surface potential and its polarity) of the rubbing cloth being brought into contact with the alignment film surface is to bring the charge control member into contact with the surface of the rubbing cloth in advance, before rubbing, and to cover the surface of the charge

control member with a material having a different polarity than the alignment film, or to control the surface potential of the member with an external controlling circuit.

As explained above, in the present invention, what is considered in advance is the phenomenon called contact charge, which occurs between the rubbing cloth and the alignment film in the rubbing process. When the rubbing cloth comes into contact with the alignment film, practically, if both surfaces have the same polarity, foreign materials which are unnecessary can be prevented.

On the other hand, the purpose of Yamazoe is to reduce electric potential difference between the rubbing cloth and die stage, that is, to reduce static electricity generated when two materials come into contact. Yamazoe does not disclose the technical concept that utilizes repulsive force by making the substrate surface (insulator) placed on the stage and the rubbing cloth have the same polarity, or utilize the polarity of the substrate surface and rubbing cloth.

In the same way, the invention of Muto reduces static electricity generated by contacting through a member made of anticharge dielectric fibers, as also is the case with Sugawara *et al.* The inventions of Muto and Sugawara *et al.* do not disclose an effect in reducing foreign materials, which is the purpose of the present invention: "before rubbing cloth comes into contact with the surface of the alignment film, make the surface of rubbing cloth have the same polarity as the potential polarity of contact charge on the alignment film surface when the rubbing cloth comes into contact with the surface of the alignment film so that they are brought into contact with the same polarity."

More specifically, the present invention differs from Sugawara *et al.* in applying "Carrier" to the rubbing cloth. The present invention has the process to

apply Carrier actively by bringing the charge control member come into contact with the rubbing cloth surface. This method stores positive or negative charge on the whole rubbing cloth all the time.

On the other hand, the cited references employ methods for inducing a charge inside the rubbing cloth or on the rear surface of the rubbing cloth, which does not apply Carrier to the surface of the rubbing cloth. For example, Sugawara *et al.* has a conductive layer on the rear surface of the rubbing cloth. Muto has die material named "anticharge dielectric fibers" inside the rubbing cloth or on the rear surface of the rubbing cloth. In every way, they induce a charge. They do not store a charge on the whole rubbing cloth. In method and physical phenomenon, they are fundamentally different from the present invention, which employs a method for applying Carrier to the surface of the rubbing cloth and storing a charge positively or negatively all the time.

Furthermore, in the present invention, the surface of the rubbing cloth is charged just before it comes into contact with the multilayer substrate. Electric potential difference exists in between the area of the multilayer substrate to be contacted now and the rubbing cloth all the time. On the contrary, Yamazoe always cancels the electric potential difference between the rubbing table and the rubbing cloth just before the rubbing cloth comes into contact with the substrate surface. This is absolutely different from the present invention. In addition, Yamazoe does not mention the electric potential difference from the multilayer substrate. Sugawara *et al.* eliminates occurring static electricity. In this sense, Sugawara *et al.* is different from the present invention. In the present invention, the surface of the rubbing cloth and the multilayer substrate are charged just before they come into contact. Electric

potential difference exists between the area of the multilayer substrate to be contacted and the rubbing cloth all the time.

As a result of all of the foregoing, it is respectfully submitted that the applied art would not support a §102 anticipatory-type rejection or §103 obviousness-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such §§102 and 103 rejections in the final Office Action mailed 6 November 2003, and express written allowance of all of the rejected claims, are respectfully requested.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer of any scope or subject matter. Further, Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, *i.e.*, Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

EXAMINER INVITED TO TELEPHONE

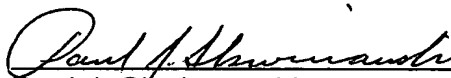
The Examiner is invited to telephone the undersigned at the local D.C. area number 703-312-6600 to discuss an Examiner's Amendment or other suggested action for accelerating prosecution and moving the present application to allowance.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that all the claims listed above as presently being under consideration in this RCE application are now in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

This Preliminary Amendment is being submitted concurrently with the presently-filed Request for Continued Examination (RCE) Under 37 CFR §1.114, and therefore, no Petition or extension fee is required for entry of this paper. To whatever other extent is actually appropriate and necessary, Applicant respectfully petitions for an extension of time under 37 CFR §1.136. Further, no additional claim fees are required for entry of this Preliminary Amendment. Please charge any actual fees due to ATSK Deposit Account No. 01-2135 (Case 520.41012X00).

Respectfully submitted,



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CONCURRENT SUBMISSIONS:

RCE Transmittal
Form PTO-2038 (Fee Code 1801)
IDS/Form PTO-1449
CN OA/English Translation
JP5-264997/English Abstract